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Has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.

Therefore, this

United States Patent

Grants to the person(s) having title to this patent the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States of America or importing the invention into the United States of America for the term set forth below, subject to the payment of maintenance fees as provided by law.

If this application was filed prior to June 8, 1995, the term of this patent is the longer of seventeen years from the date of grant of this patent or twenty years from the earliest effective U.S. filing date of the application, subject to any statutory extension.

If this application was filed on or after June 8, 1995, the term of this patent is twenty years from the U.S. filing date, subject to any statutory extension. If the application contains a specific reference to an earlier filed application or applications under 35 U.S.C. 120, 121 or 365(c), the term of the patent is twenty years from the date on which the earliest application was filed, subject to any statutory extension.

Bence Lehman

Commissioner of Patents and Trademarks

Margie V. Turner

Attest



US005745182A

United States Patent [19]

Yukitake et al.

[11] **Patent Number:** 5,745,182[45] **Date of Patent:** Apr. 28, 1998[54] **METHOD FOR DETERMINING MOTION COMPENSATION**[75] Inventors: Takeshi Yukitake; Shuji Inoue, both of
Yokohama, Japan[73] Assignee: Matsushita Electric Industrial Co.,
Ltd., Osaka, Japan

[21] Appl. No.: 278,010

[22] Filed: Jul. 20, 1994

Related U.S. Application Data[62] Division of Ser. No. 970,046, Nov. 2, 1992, Pat. No.
5,369,449.[30] **Foreign Application Priority Data**Nov. 8, 1991 [JP] Japan 3-293004
Jul. 9, 1992 [JP] Japan 4-181980[51] Int. Cl.⁶ H04N 7/32

[52] U.S. Cl. 348/416; 348/699

[58] Field of Search 348/413, 416,
348/699, 400-402, 407, 409-412, 384,
390, 415; 382/232, 236, 238; H04N 7/137[56] **References Cited****U.S. PATENT DOCUMENTS**4,691,230 9/1987 Kaneko et al. 348/699
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P.L.L.C.[57] **ABSTRACT**

A method for predicting motion compensation for determin-
ing of an input image based on a motion vector of the input
image from this input image to a reference image which has
been sampled at a first set time, and the method includes
calculating a motion vector of the input image based on a
move, at a second set time, of a block unit which is a part
of the input image and consists of a plurality of pixels, and
calculating a motion vector of the reference image based on
a move, at the first set time, of a block unit which is a part
of the reference image and consists of a plurality of pixels.
Move compensation of the input image is calculated both
from the motion vector of the input image and from the
motion vector of the reference image, to thereby realize a
method for determining motion compensation with high
precision.

3 Claims, 6 Drawing Sheets